AMENDMENTS TO THE CLAIMS

1. (Original) A method for navigation on a surface using at least one optical sensor comprising an image sensor set to capture consecutive images of said surface during movement, each image being compared to a current reference frame, the distance between the captures being accumulated in order to update the position of said sensor, characterized in that an observation frame is stored in a memory as a reference and that each subsequent image is compared with a current reference frame in a procedure of tracing the motion of a particular region of the surface around said image sensor's field of view between sequential exposures, finding said particular region at each exposure by taking images at a predicted position, wherein said predicted position is identified by means of at least a horizontal and a vertical coordinate anda rotation angle.

2. (Original) Method for navigation on a surface according to claim 1, characterized in that said optical sensor(s) are mounted on a handheld printer device and that said coordinates and rotation angle defines the displacement and rotation, respectively, of said device.

3. (Original) Method for navigation on a surface according to claim 2, characterized in that the rotation angle is determined by using two different positions on the surface with some distance between them, said two positions being observed and traced within at least one big area optical sensor, or smaller optical sensors with well known geometry, to get said angle of rotation.

4. (Currently Amended) Method for navigation on a surface according to claim 1~~, 2 or 3~~, characterized in that each new captured image

is compared to said current reference frame after juxtaposition and rotation of the images.

5. (Currently Amended) Method for navigation on a surface according to ~~any of claims 1 to 4~~ claim 1, characterized in that each new image is compared to said current reference frame by correlating the new image with the current reference frame at a number of positions around the predicted position to find out which position ~~that~~ has the highest correlation.

6. (Original) Method for navigation on a surface according to claim 5, characterized in that new reference frames are captured in such places of field of view which provides the longest prediction distance of the device travelling without recapturing.

7. (Original) A method for navigation on a surface according to claim 6, characterized in that a new reference frame is captured in the field of view of the sensor as the captured images approaches the edge of a sensor's field of view or if the rotation angle has exceeded a predetermined threshold.

8. (Original) A method for navigation on a surface according to claim 6, characterized in that the new reference frame is captured at that edge of the field of view of the sensor which provides the longest predicted elapsed time to when next recapture must be done.

9. (Original) A method for navigation on a surface according to claim 5, characterized in that the new reference frame is captured in the centre of the sensor's field of view.

10. (Original) A method for navigation on a surface according to claim 5, characterized in that the current reference frame serves as reference

observation frame for one or a few additional exposures after a new reference frame has been captured and stored.

11. (Original) A method for navigation on a surface according to claim 10, characterized in that the position is estimated by extrapolation from earlier position updates as said new reference observation frame is captured and that subsequently during said few additional exposures the position is determined and updated by interpolation based on position updates before and after the moment the new reference frame was captured; thereafter the new reference frame is allowed to serve as current reference frame.

12. (Original) A method for navigation on a surface according to claim 5, characterized in that a new reference frame is captured and used as current reference frame immediately for the following frames, if the position determination for the last two consecutive captured images fail.

13. (Original) A device navigating on a surface by using at least one optical sensor comprising an image sensor set to capture consecutive images of said surface during movement, each image being compared to a previous, the distance between the captures being accumulated in order to update the position of said sensor, characterized in that said device comprises a memory in which an observation frame is stored as a reference image and that said device is arranged to compare each subsequent image with a current reference frame in a procedure of tracing the motion of a particular region of the surface around said image sensor's field of view between sequential exposures, finding said particular region at each exposure by taking images at a predicted position, wherein said predicted position is identified by means of at least a horizontal and a vertical coordinate and a rotation angle.